

Serial No. 10/642,275
September 8, 2005
Reply to the Office Action dated June 9, 2005
Page 5 of 8

REMARKS/ARGUMENTS

Claims 1, 3-9, 11 and 13-19 are pending in this application. By this Amendment, Applicants cancel claims 2, 10, 12 and 20 and amend claims 1, 7-9, 11, 13, 14 and 17-19.

Claims 2, 9, 11-14 and 18 were objected to for containing various minor informalities. Applicants have canceled claims 2 and 12 and amended claims 7-9, 11, 13, 14 and 17-19 to correct the minor informalities noted by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of this objection.

Claims 1, 3-6 and 10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Rubenstein et al. (U.S. 3,368,861). Claims 1-6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Shirai et al. (U.S. 5,493,222). Claims 11, 13-16 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rubenstein et al. Claims 11-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shirai et al. Claims 7, 8, 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rubenstein et al. in view of Emo et al. (U.S. 4,483,232). Claims 9 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rubenstein et al. in view of Emo et al., and further in view of Onaka et al. (US 2003/0210451).

Claim 1 has been amended to recite:

"A photo magnetic field sensor comprising:
a Faraday rotator including a paramagnetic material, a polarizer, an analyzer, a light-irradiating element, and a light-sensing element; wherein **the paramagnetic material is made of a paramagnetic garnet single crystal consisting essentially of an oxide of Tb, Al and at least one of Pr and Ce.**" (emphasis added)

Applicants' claim 11 has been amended to recite features that are similar to the features recited in Applicants' claim 1, including the above-emphasized features.

With the unique combination and arrangement of features recited in claims 1 and 11, including the feature of "the paramagnetic material is made of a paramagnetic garnet single crystal consisting essentially of an oxide of Tb, Al and at least one of Pr and Ce," Applicants have been able to provide a photomagnetic field sensor which

Serial No. 10/642,275
September 8, 2005
Reply to the Office Action dated June 9, 2005
Page 6 of 8

exhibits a high sensitivity even when a large current flows, i.e., the magnetic field strength is high, and senses a magnetic field by using a light with a wavelength in the visible light region of about 500 nm to about 650 nm (see, for example, the second full paragraph of page 3 of the originally filed specification).

The Examiner alleged that each of Rubenstein et al. and Shirai et al. teaches all of the features recited in Applicants' claim 1, and all of the features recited in Applicants' claim 11, except for the specific dimensions of the paramagnetic material recited therein.

Applicants' claim 1 has been amended to recite the feature of "the paramagnetic material is made of a paramagnetic garnet single crystal consisting essentially of an oxide of Tb, Al and at least one of Pr and Ce." Applicants' claim 11 has been similarly amended. Support for these amendments may be found, for example, in Examples 2 and 3 on page 15 of the originally filed specification.

In contrast to Applicants' claims 1 and 11, Rubenstein et al. merely teaches a paramagnetic material which includes only an oxide consisting of Tb and Al. Rubenstein fails to teach or suggest that the paramagnetic material could or should include any other material, and certainly fails to teach or suggest that the paramagnetic material could or should include either of Pr and Ce. In fact, Rubenstein et al. fails to mention anything at all about Pr or Ce.

Thus, Rubenstein et al. clearly fails to teach or suggest the feature of "the paramagnetic material is made of "the Faraday rotator including the paramagnetic material is made of a paramagnetic garnet single crystal consisting essentially of an oxide of Tb, Al and at least one of Pr and Ce" as recited in Applicants' claim 1, and similarly in Applicants' claim 11.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Rubenstein et al., and the rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Rubenstein et al.

Serial No. 10/642,275

September 8, 2005

Reply to the Office Action dated June 9, 2005

Page 7 of 8

Shirai et al. teaches various different paramagnetic materials, some of which include Tb and Al. However, Shirai et al. specifically discloses that the iron garnet single crystals are selected using the general equation: $R_{3-x}Bi_xFe_{5-z}A_zO_{12}$ (see, for example, col. 8, lines 26-36 of Shirai et al.). That is, the iron garnet single crystal (paramagnetic material) of Shirai et al. must include Bi and Fe. Since the inclusion of Bi and Fe clearly materially affects the basic and novel characteristics of the paramagnetic material, the paramagnetic material of Shirai et al. cannot consist essentially of an oxide of Tb, Al and at least one of Pr and Ce (see MPEP § 2111.03) as recited in Applicants' claims 1 and 11.

Thus, Shirai et al. certainly cannot be fairly construed as teaching or suggesting the feature of "the paramagnetic material is made of a paramagnetic garnet single crystal consisting essentially of an oxide of Tb, Al and at least one of Pr and Ce" as recited in Applicants claim 1, and similarly in Applicants' claim 11.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Shirai et al., and the rejection of claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Shirai et al.

The Examiner relied upon Emo et al. and Onaka et al. to allegedly cure various deficiencies of Rubenstein et al. However, neither Emo et al. nor Onaka et al. teaches or suggests the feature of "the paramagnetic material is made of a paramagnetic garnet single crystal consisting essentially of Tb, Al and at least one of Pr and Ce" as recited in Applicants' claim 1, and similarly in Applicants' claim 11.

Accordingly, Applicants respectfully submit that Rubenstein et al., Shirai et al., Emo et al. and Onaka et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicants' claim 1 and 11.

In view of the foregoing amendments and remarks, Applicants respectfully submit that Claims 1 and 11 are allowable. Claims 3-9 and 13-19 depend upon claims 1 and 11, and are therefore allowable for at least the reasons that claims 1 and 1 are allowable.

Serial No. 10/642,275
September 8, 2005
Reply to the Office Action dated June 9, 2005
Page 8 of 8

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Date: September 8, 2005


Attorneys for Applicant

Joseph R. Keating
Registration No. 37,368

Christopher A. Bennett
Registration No. 46,710

KEATING & BENNETT LLP
8180 Greensboro Drive, Suite 850
Tyson's Corner, VA 22102
Telephone: (703) 637-1480
Facsimile: (703) 637-1499